

Introduction:

The Black Rock Desert which is located 15Km west of Fillmore, Utah is one of the youngest monogenetic volcanic fields in the Basin and Range. Within the past 20,000 years there has been three substantial eruptions. The youngest of which was the lce Springs Volcano, which erupted 660 years ago (Oviatt 1991). This has quantified a basic hazards analysis because there is a 5% chance in the next 50 years of a future eruption (Hintz 2008).

#### References

Oviatt, Charles, 1991, Quaternary Geology of the Black Rock Desert

Hintz Amanda Physical Volcanology of a Young Monogenetic Field Black Rock Desert Utah (2008 USF Master's Thesis)

Utah AGRC Data Sources (Highways shpfile, Utah Counties Shp File, 5mDEM, 30m DEM, Utah Municipalities shpfile.,)





Lava flow hazard potential was determined by measuring the width of each lava flows and then using those widths as a buffer around the faults. The widths measured using GIS means were 11.7Km, 9.7Km, and 4.8Km. These widths also allowed for analysis of the most likely areas for lava flows. The most likely buffer would be the 4.8Km buffer.

# GIS Analysis of Volcanic Hazards in Millard County, Utah McKay Nelsen, Nathan Toke, Steven Fellows, Joshua Jackson

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### Lava Flow Hazard Potential

### Land Ownership in Hazard Zone



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Based on what can be gathered from this basic analysis, an overall look at Kilometers Most of the area with risk of potential impact from implications of a volcanic eruptions with basaltic lava flows can be assessed for lava flows is Federal land(62%). Private lands Millard County. Future studies in the occupy 29% of the hazard zone and approximately 9% of the hazard areas are Utah State lands. Total area can determine the overall length of time that past eruptions persisted This land area with risk of being impacted is analysis can also provide a basic overall approximately 340,000 acres. understanding of hazards associated with similar volcanic fields that could potentially be located in urbanized areas.

## Potential Impacts

#### Landownership in Hazard Area

<u>Owner</u>	<u>Area m^2</u>	<u>Acres</u>
Federal	8.544E+08	211123
Private	3.978E+08	98291
State	1.222E+08	30185
Total	1.374E+09	339599

Total Length of Potentially Impacted Roadways (Miles)

	<u>Iotal Lava Flow</u>
<u>Route Name</u>	<u>Risk Length</u>
SR 257	27.86
I-15	55.11
US 50	0.84
SIX Mile	0.32
US 6	14.85
SR 100	22.65
SR 133	3.91
Total	125.54

#### **Conclusions:**